

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for reducing the amount of particles and residues in photomasks comprising:

providing a photomask having patterned metal layers;
treating the photomask with a cleaning process comprising:
contacting the photomask with a solution comprising ammonium hydroxide, hydrogen peroxide and water maintained at a constant temperature;
agitating the solution by using ultrasonic; and
exposing the photomask to the solution;
removing particles and residues greater than about 0.2 microns while removing a minimal amount of patterned metal layer or layers; and
exercising the cleaning process on a particular photomask for a multiple number of cleaning cycles without degradation of the photomask,
wherein the ratio of ammonium hydroxide:hydrogen peroxide:water of the cleaning solution is from about 1:1:200 to about 1:1:20 respectively by volume.

Claim 2 (canceled)

Claim 3 (previously presented): The method of Claim 1 wherein the minimal amount of metal layer or layers removed during cleaning results in less than a 6.3% increase in optical transmission.

Claim 4 (previously presented): The method of Claim 1 wherein the constant temperature range of the solution is from about 15 degrees centigrade to about 60 degrees centigrade.

Claim 5 (previously presented): The method of Claim 1 wherein the solution has a pH above about 8.

Claim 6 (original): The method of Claim 1 wherein the number of multiple cleaning cycles exercised on a particular photomask without degradation is greater than about ten cleaning cycles.

Claim 7 (previously presented): A method for attenuating yield loss in fabrication of microelectronics fabrications employing phase shift photomasks by reducing the amount of particles and residues in said photomasks comprising:

providing a phase shift photomask having patterned metal layers;

treating the phase shift photomask with a cleaning process comprising:

contacting the photomask with a solution comprising ammonium hydroxide, hydrogen peroxide and water maintained at a constant temperature;

agitating the solution by using ultrasonic; and

exposing the photomask to the solution;

removing particles greater than about 0.2 microns while removing a minimal amount of patterned metal layers; and

exercising the cleaning process on a particular phase shift photomask for a multiple number of cleaning cycles without degradation of the phase shift photomask,

wherein the ratio of ammonium hydroxide:hydrogen peroxide:water in the solution ranges from about 1:1:200 to about 1:1:20 by volume respectively.

Claim 8 (original): The method of claim 7 wherein the phase shift mask is formed of patterned layers of chromium and molybdenum silicon alloy.

Claim 9 (canceled)

Claim 10 (previously presented): The method of Claim 7 whereby the minimal amount of metal layers removed by the cleaning process is equivalent to less than a 6.3% increase in optical transmittance.

Claim 11 (previously presented): The method of Claim 7 whereby the constant temperature range of the solution is from about 15 degrees centigrade to about 60 degrees centigrade.

Claim 12 (previously presented): The method of Claim 7 wherein the cleaning solution has a pH greater than about 8.

Claim 13 (previously presented): The method of claim 7 wherein the number of cleaning cycles exercised on a particular phase shift photomask without degradation is greater than ten cycles.

Claim 14 (previously presented): The method of claim 1, wherein the photomask includes a transparent substrate.

Claim 15 (previously presented): The method of claim 1, wherein the photomask includes a fused quartz substrate.

Claim 16 (previously presented): The method of claim 7, wherein the photomask includes a transparent substrate.

Claim 17 (previously presented): The method of claim 7, wherein the photomask includes a fused quartz substrate.